UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,434	06/05/2001	Yining Deng	10006290-1	7733

7590 11/14/2005

HEWLETT-PACKARD COMPANY
Intellectual Property Admiinistration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
COUGHLAN, PETER D	
ART UNIT	**PAPER NUMBER**
2129	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/875,434	DENG ET AL.	
	Examiner	Art Unit	
	Peter Coughlan	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Claims 1-13 are pending in this application.

35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-13 are rejected under 35 U.S.C. 101 because the language of the claims raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. The word/phrases 'computer readable medium' and 'method' used in all these claims does not link the abstract concept to the technological art, environment or machine. It is suggested the applicant use the phrase "computer implemented" in the preamble of independent claim(s) 1 and 9 to describe the invention since this would cure the deficiency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manjunath and Deng, in view of Manjunath and Ma, in view of Kadtke et al, in view of Melen, in view of Wagner, in view of Shu (Issues for Image/Video Digital Libraries, referred to as **MD**; Texture Features for Browsing and Retrieval of Image Data, referred to as **MM**; U. S. Patent 6278961, referred to as **Kadtke**; U. S. Patent 5719960, referred to as **Melen**; U. S. Patent 5950180, referred to as **Wagner**; U. S. Patent 4901360, referred to as **Shu**).

Claim 1.

MD teaches (a) a task component configured to perform a plurality of classification tasks arranged in [(a]] an established sequential progression of decision making (**MD**, p595, C2:10-11; Examiner's Note (EN) The first stage, segmentation

search is the first of a plurality of classification tasks. This is the first part of a system decision system software.),

said established sequential progression of decision making including a plurality of classification nodes for assigning class labels to an individual image file of said image files of non-textual subject data(**MD**, p595, C2:15-20; EN The segmentation part is the first step in the established progression of decision making. The next step is the looking for local image features which fall under texture, color and shape.),

at least some of said classification nodes including algorithms for determining which of a plurality of alternative next classification nodes Is to be encountered in said sequential progression of decision making(**MD**, p595, C2:41-43; EN In this reference, a query pattern request will be used to find a match. This illustrates a plurality of next classification nodes to go to.);

(b) an algorithmic component having access to a storage of available algorithms for execution at said classification nodes, said algorithmic component being common to said classification nodes and being accessed by each said classification node for selecting a specific algorithm for each of said classification tasks(**MD**, p395 C2:44 through p596. C1:6; EN Here the 'access to a storage of available algorithms' of applicant is equivalent to 'visual thesaurus' of MD. The various levels of hierarchy of MD is equivalent to 'classification nodes being accessed by each said classification nodes' of applicant.),

said specific algorithm being configured to execute at least one of content based analysis for processing content-based data (**MD**, p596, C1:11 through p596, C2:5).

MD does not teach meta-data analysis for processing meta-data. MM teaches meta-data analysis for processing meta-data (**MM**, p841, C1:18-20). It would have been obvious to a

person having ordinary skill in the art at the time of applicant's invention to modify the method of determination of classification of MD with meta-data analysis for processing meta-data by MM. Having information about the non-textual file besides the content of the file itself is needed as well for classification purposes.

MD teaches for at least some of said classification nodes said algorithmic component is configured to select among alternative stored algorithms that are specific to determining assignment of a same said class label (**MD**, p596, C2:28-31; EN After the image is segmented into regions by the first algorithm, alternative algorithms such as color, shape texture and location are possible used),

said algorithmic component being further configured to use prior determinations at said classification nodes as a basis for selecting among said alternative stored algorithms specific to determining assignment of said same class label (**MD**, p597, C1:16 through C2:4; EN the 'prior determinations' of applicant is equivalent to 'sub-objects' in number of video frames in sequence.);

(c) a sub-algorithmic component for selecting at least one sub-algorithmic routine for said specific algorithm having a plurality of sub-algorithm routines, said at least one sub-algorithmic routine being selected based on said selecting said algorithm (**MD**, p597, C2:5-16; EN Sub-object information is now generated and using that, sub-algorithms of spatial and temporal relations are now used.); and

(d) a learning component for modifying said arrangement of classification tasks according to determinations of frequency patterns In the common assignments of said .class labels to individual said image files of non-textual subject data(**MD**, p596, C2:5-9; EN A hybrid neural network is a design that learns from exposure to frequency of patterns).

Claim 2.

MD teachs a system web-service module for providing Internet access to said system decision module (**MD**, p596 C2:41 through p597 C1:2).

Claim 3.

MD teachs a system interface module for providing communications among a plurality of system and nonsystem modules, wherein one of said system modules Is said system decision module (**MD**, p596, C2:37-41).

Claim 4.

MD teachs non-system modules includes at least one said sub-algorithmic routine (**MD**, p597, C1:5-7; EN Non-system modules such as object tracking scheme would have working algorithm(s) to make them functional.

Claim 5.

MD and MM do not teach the system interface module further includes data components for storing data associated with classifying a plurality of said image files of said non-textual subject data and at least one control component for executing said sub-algorithmic routines. Kadtke teaches the system wherein said system interface module (**Kadtke**, Figure 2; EN The 'system interface' of applicant enables communication between modules. In Figure 3, you can see the communication between modules 201, 202, 203, 204 and 205 of Kadtke.) further includes data components for storing data associated with classifying a plurality of said image files of said non-textual subject data (**Kadtke**, C2:44-47; EN The 'storing data' of applicant is

equivalent to 'build and modify a database of features' of Kadtke.) and at least one control component for executing said sub-algorithmic routines (**Kadtke**, Figure 1; EN Kadtke shows in control component 105, has three different sub-algorithms to choose from.). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with the system wherein said system interface module further includes data components for storing data associated with classifying a plurality of said image files of said non-textual subject data and at least one control component for executing said sub-algorithmic routines by Kadtke. This allows for ease of communication of new modules if added and little effect if removed, having a storage facility with images and associated classification for ease of retrieval, and easing system design by having multiple sub-algorithms associated to a single node.

Claim 6.

MD, MM and Kadtke do not teach a media input/output module for administering data associated with classifying said non-textual subject data by reading and writing said data among a plurality of modules. Melen teaches a media input/output module for administering data associated with classifying said non-textual subject data by reading and writing said data among a plurality of modules (**Melen**, C7:15-18). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with the system further comprising a media input/output module for administering data associated with classifying said non-textual subject data by reading and writing said data among a plurality of modules by Melen. This allows for faster and more secure data input.

Claim 7.

MD and MM do not teach the learning component is configured to identify an algorithm for each of said classification tasks and at least one sub-algorithmic routine for said algorithm. Kadtke teaches the learning component is configured to identify an algorithm for each of said classification tasks and at least one sub-algorithmic routine for said algorithm (**Kadtke**, C7:66 through C8:5; EN the learning component of applicant is equivalent to 'neural nets' of Kadtke. A neural network can take in data from and algorithm and generate the correct sub-algorithm to use for the next classification step. It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with teaches the system wherein said learning component is configured to identify an algorithm for each of said classification tasks and at least one sub-algorithmic routine for said algorithm by Kadtke. Using a neural net for this has the advantages of learning and dynamically changing which sub-algorithm to choose from given the inputted data.

Claim 8.

MD, MM, Kadtke and Melen do not teach the data capturing device configured to capture said content-based data and record said meta-data, said content-based data corresponding to content information of a file of said subject data and said meta-data corresponding to situational environmental data of said data capturing device during a capture of said subject data. Wagner teaches the data capturing device configured to capture said content-based data and record said meta-data, said content-based data corresponding to content information of a file of said subject data and said meta-data corresponding to situational environmental data of said data capturing device during a

capture of said subject data (**Wagner**, C4:10-12). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with the system of claim 1 further comprising a data capturing device configured to capture said content-based data and record said meta-data, said content-based data corresponding to content information of a file of said subject data and said meta-data corresponding to situational environmental data of said data capturing device during a capture of said subject data by Wagner. This permits input to come from the real world thus having the ability to work in today's situation.

Claim 9.

MD teaches establishing a sequential progression of decision making, including using automated processing techniques to define a dependent arrangement of a plurality of task nodes, each said task node in said dependent arrangement being associated with a class label for classifying a data file (**MD**, 595, C2:9-14; EN Segmentation is the first step of an established progression of decision making. Region based search techniques are the next step with this design. Region based is dependent of segmentation and they are within their own separate classes of algorithms),

MD teaches at least some of said task nodes including algorithms for determining which alternative next task node is to be selected in said sequential progression of decision making, said task nodes including multi-algorithmic task nodes having a plurality of alternative said algorithms for implementing said determination, each said multi-algorithmic task node being specific to determining assignment of a particular said class label and each said alternative algorithm at said multi-algorithmic task node being

specific to said particular class label (**MD**, p595, C2:15-20; EN As stated above, the region based search follows a sequential pattern for decision in classification. In region based search there are a number of areas which the method can choose from. Texture, color, location are but a few multi-algorithms not within the same class which the task node can pick from.).

MD, MM, Kadtke and Melen do not teach receiving a file of non-textual subject data, Wagner teaches receiving a file of non-textual subject data (**Wagner**, C4:10-12). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with receiving a file of non-textual subject data by Wagner. Using a CCD camera is a standard method for an image capturing device.

MD and MM do not teach progressing said file through said dependent arrangement defined in said establishing said sequential progression of decision making. Kadtke teaches progressing said file through said dependent arrangement defined in said establishing said sequential progression of decision making (**Kadtke**, Figure 2; EN This shows a flow chart that is sequential and containing dependent arranged modules). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with progressing said file through said dependent arrangement defined in said establishing said sequential progression of decision making by Kadtke. By using a standard consistence approach, this allows for modifications to be made with little effect on other modules.

MD and MM do not teach selecting from among said alternative algorithms at said multi-algorithmic task nodes. Kadtke teaches selecting from among said alternative algorithms at said multi-algorithmic task nodes (**Kadtke**, Figure 1). It would

have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with selecting from among said alternative algorithms at said multi-algorithmic task nodes by Kadtke. This allows for a simpler design when constructing the decision making process.

MD and MM do not teach utilizing an algorithmic component to perform said selection, said selection at least partially based on prior determinations at previously encountered task nodes in said sequential progression. Kadtke teaches utilizing an algorithmic component to perform said selection, said selection at least partially based on prior determinations at previously encountered task nodes in said sequential progression (**Kadtke**, C9:25-29). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with utilizing an algorithmic component to perform said selection, said selection at least partially based on prior determinations at previously encountered task nodes in said sequential progression by Kadtke. By using previous encountered task nodes and statically methods, the performance of the method can be improved upon.

Claim 10.

MD teaches a learning procedure in which content-based data is extracted from each of a plurality of training images and meta-data is identified for each said training image (**MD**, p596, C2:34-35).

Claim 11.

MD, MM, Kadtke and Melen do not teach the step of generating a plurality of learning classes that are descriptive of said training Images, including using an association pattern technique of recognizing and using patterns In assignments of said class labels, said step of generating including applying content-based analysis for said content-based data and meta-data analysis for said meta-data. Wagner teaches a step of generating a plurality of learning classes that are descriptive of said training Images, including using an association pattern technique of recognizing and using patterns In assignments of said class labels, said step of generating including applying content-based analysis for said content-based data and meta-data analysis for said meta-data (**Wagner**, C5:36-39). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with generating a plurality of learning classes that are descriptive of said training Images, including using an association pattern technique of recognizing and using patterns In assignments of said class labels, said step of generating including applying content-based analysis for said content-based data and meta-data analysis for said meta-data by Wagner. EN By using a neural network, associating patterns and recognizing said patterns is easily accomplished.

Claim 12.

MD, MM, Kadtke and Melen do not teach the step of dynamically modifying said sequential progression of decision making, including monitoring said determinations at each of said decision nodes and adjusting for detected patterns in said determinations. Wagner teaches the step of dynamically modifying said sequential progression of

decision making, including monitoring said determinations at each of said decision nodes and adjusting for detected patterns in said determinations (**Wagner**, Figure 4; EN By using a neural network, dynamically modifying the decision making progress is already there in the design.). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with a step of dynamically modifying said sequential progression of decision making, including monitoring said determinations at each of said decision nodes and adjusting for detected patterns in said determinations by Wagner. Having the ability to dynamically alter the decision making progress, will have the effect of a more efficient machine and the ability to change with the current environment.

Claim 13.

MD, MM, Kadtke, Melen and Wagner do not teach a step of assigning a semantic description to said file of non-textual subject data for one of organizing said file and matching a query during a search for said file. Shu teaches a step of assigning a semantic description to said file of non-textual subject data for one of organizing said file and matching a query during a search for said file (**Shu**, C14:1-4). It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention of a system for classifying files of non-textual subject data of MD with a step of assigning a semantic description to said file of non-textual subject data for one of organizing said file and matching a query during a search for said file by Shu. This will act as another link between the user and the file for organizing purposes.

Conclusion

The prior art of record and not relied upon is considered pertinent to the applicant's disclosure.

-NeTra-V: Toward an Object_based Video Representation: Yining Deng, B. S. Manjunath.

-Peer Group Filtering and Perceptual Color Image Quantization: Yining Deng, Charles Kenney, Michael S. Moore, B. S. Manjunath.

-Spatio-teporal Relationships and Video Object Extraction:Yining Deng, B. S. Manjunath.

-Content-based Search of video Using Color, Texture and Motion: Yining Deng, B. S. Manjunath.

Claims 1-13 are rejected.

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor David Vincent can be reached at (571) 272-3080. Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

Hand delivered to:

Receptionist,

Customer Service Window,

Randolph Building,

401 Dulany Street,

Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 273-8300 (for formal communications intended for entry.)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Peter Coughlan

10/31/2005